CLAIMS

What is claimed is:

1. A method for manufacturing zeolite from ashes resulting from the incineration of combustible waste (hereinafter "ashes"), with said method comprising:

(1) a step for (a) introducing the ashes into a first tank (of two tanks) so as to form a liquid that contains, as a solvent, either an alkaline aqueous solution or water, air and electrolytic water, and (b) continuously reintroducing that liquid into a first (of two) substance-separating/recovering device so as to make that liquid harmless; and

(2) a step for (c) introducing into a second tank the clear liquid that has been separated and recovered in said first substance-separating/recovering device and then returned into the first tank, so as to convert that clear liquid into a heat-treated liquid that contains an alkaline aqueous solution as a solvent, and (d) continuously reintroducing said heat-treated liquid into a second substance-separating/recovering device so as to crystallize that heat-treated liquid into zeolite that contains tecto-alumino-silicate.

2. A method for manufacturing zeolite from the aforementioned ashes, with said method comprising:

(1) a step for (a) introducing the ashes into a first tank so as to obtain a clear liquid that contains, as a solvent, either an alkaline aqueous solution or water, air and electrolytic water, and (b) continuously reintroducing that liquid into a substance-separating/recovering device so as to make that liquid harmless; and

(2) a step for (a) introducing into a second tank through a buffer tank the clear liquid that has been separated and recovered in said substance-separating/recovering device and then returned to the first tank, so as to convert it into a heat-treated liquid that contains an alkaline aqueous solution as a solvent, and (b) continuously reintroducing the heat-treated liquid into said substance-separating/recovering device so as to crystallize that heat-treated liquid into zeolite that contains tecto-alumino-silicate.

3. A method for manufacturing zeolite from the aforementioned ashes, as set forth in Claim 1, with said method comprising:

(1) a step in which said first and second substance-separating/recovering devices (a)

centrifugally separate substances that are desired to be centrifugally separated and recovered from said introduced liquid while a centrifugal force is applied to said liquid by using a rotor that rotates at high speed and (b) change said liquid into a mist-like state; and

(2) a step for (a) impressing onto said liquid, which has been changed into a mist-like state, a superconductive magnetic field that corresponds to the magnetization intensity of the substances to be magnetically attracted, separated, and recovered, and (b) separating and recovering the substances to be magnetically attracted, separated and recovered.

4. A method for manufacturing zeolite from the ashes, as set forth in Claim 1, and characterized such that said substances to be magnetically attracted, separated, and recovered are dioxins (polychlorinated dibenzodioxins [PCDDs] and polychlorinated dibenzofurans [PCDFs]).

5. A method for manufacturing zeolite from the ashes, as set forth in Claim 2, and characterized such that said substances to be magnetically attracted, separated, and recovered are dioxins (polychlorinated dibenzodioxins [PCDDs] and polychlorinated dibenzofurans [PCDFs]).

6. A method for manufacturing zeolite from the ashes, as set forth in Claim 1, and characterized such that said substances to be magnetically attracted, separated, and recovered are heavy metals.

7. A method for manufacturing zeolite from the ashes, as set forth in Claim 2, and characterized such that said substances to be magnetically attracted, separated, and recovered are heavy metals.

8. A device for manufacturing zeolite from the aforementioned ashes, with said device comprising:

(1) a first tank, which (a) converts the ashes into a liquid that contains, as a solvent, either an alkaline aqueous solution or water, air and electrolytic water, and (b) continuously reinjects that liquid into a first substance-separating/recovering device;

(2) a second tank, which (a) forms a clear liquid, which has been separated and

recovered in said first substance-separating/recovering device and then returned to the first tank, into a heat-treated liquid that contains an alkaline aqueous solution as a solvent, and (b) continuously reintroduces the heat-treated liquid into a second substance-separating/recovering device; and

(3) first and second substance-separating/recovering devices, each of which comprises: (a) a hollow cylindrical rotor, (b) the axis of said rotor, (c) plural scraping blades that are rotatably installed inside of said rotor, (d) rotational axes of said scraping blades, whose central axis is the rotational axis of said rotor, and (e) superconductive magnets that are not liquid-cooled types and that are arranged along the periphery of said rotor as a hollow cylinder.

9. A device for manufacturing zeolite from the ashes, with said device characterized such that it is comprised of:

(1) a first tank, which (a) converts the aforementioned ashes into a liquid that contains, as a solvent, either an alkaline aqueous solution or water, air and electrolytic water, and (b) continuously reinjects that liquid into a substance-separating/recovering device;

(2) a second tank, which (a) forms, into a heat-treated liquid that contains an alkaline aqueous solution as a solvent, a clear liquid that has been separated and recovered in said substance-separating/recovering device and then returned to the first tank, and (b) continuously reinjects that clear liquid into said substance-separating/recovering device; and

(3) a substance-separating/recovering device, which comprises: (a) a hollow cylindrical rotor, (b) the axis of said rotor, (c) plural scraping blades that are rotatably installed inside of said rotor, (d) rotational axes of said scraping blades, whose central axis is the axis of said rotor, and (e) superconductive magnets that are not liquid-cooled types and that are arranged along the periphery of said rotor as a hollow cylinder; and with said device for manufacturing zeolite characterized such that the clear liquid that is returned to the first tank (1) is introduced, through the aforementioned buffer tank, into the aforementioned second tank, which contains the alkaline aqueous solution, where the clear liquid is stored until the volume of that liquid reaches a predetermined level, and (2) is again introduced, together with drainage, into the substance-separating/recovering device by means of a switching valve.